

# Chapter 2

## Summary of Alternatives

### (2.1) Introduction

This chapter describes the alternatives for implementing the KBB Recovery Plan goals in the Savanna Ecosystem Restoration Project Area. The proposed activities for each alternative are displayed in Table 2.1 and on the maps at the end of this chapter.

### (2.2) Developing a Range of Alternatives

It is the role of Forest Service natural resource specialists to develop project proposals and to analyze the environmental effects related to these projects. Collectively, these specialists are referred to as the Interdisciplinary Team (ID Team). Which disciplines are represented on a team varies by project. The intention is to have a diverse team that is representative of the multiple resources that may be affected by the proposed actions. The diversity of the team provides varying perspectives on management activities and a holistic approach in the development of a range of viable alternatives. The team members and resource specialists consulted regarding this project are listed in Chapter 4.

The regulations of the National Environmental Policy Act (NEPA) mandate consideration of all reasonable alternatives for a proposed action, including the identification and discussion of alternatives eliminated from detailed study. To develop alternatives, the ID Team reviewed the comments and concerns expressed by the public and internal sources during the scoping process. This was done by analyzing the comments received, grouping like comments, and placing them in the following categories: 1) those that were substantive, 2) those that could be addressed in the discussion of effects, 3) those that could be addressed through mitigation, 4) those that were beyond the scope of this document, and 5) those which should be considered for inclusion into an alternative. The issues identified for possible inclusion in an alternative were then reviewed to determine if they related to the Purpose and Need. Those not directly relating to the Purpose and Need of the project were eliminated from further analysis. The ID Team also identified indicators or measurements used to compare how each alternative responds to the issue for which it was developed.

A modified version of the original proposed action and one other action alternative have been developed to meet the objectives and to address and resolve the identified issues. Each alternative represents a site-specific mix of proposals that responds to these issues. In addition, the team utilizes a baseline alternative (termed the No-Action Alternative) which serves to represent the consequences of implementing no management activities in this area at this time. From this range of alternatives, the District Ranger has a basis for determining the trade-offs between implementing the alternatives, including the No-Action Alternative.

## (2.3) Alternatives Considered in Detail

This assessment evaluates the No Action Alternative (Alternative 1) and two action alternatives, which are described below. The action alternatives are consistent with the standards and guidelines of the Forest Plan. Table 2-1 displays a summary comparison of alternatives by issue, objective, and proposed actions. The vegetative treatment acreages and road and trail mileages under each alternative were estimated using Geographic Information System (GIS). The Forest Service uses the most current and complete data available. Using GIS products for purposes other than those for which they were created may yield inaccurate or misleading results. The Forest Service will not be liable for any activity involving this information.

### (2.3a) Alternative 1 (No Action)

Alternative 1 is the No Action Alternative. Under Alternative 1, none of the proposed management activities would occur in the Project Area on National Forest System lands. Some activities, such as minor road improvements and resource protection would continue within the Project Area. The selection of Alternative 1 does not preclude future analysis or the implementation of on-going management proposals within the Project Area.

#### Summary of Alternative 1

- None of the proposed management activities would occur in the Project Area on National Forest System lands.
- Provides a baseline against which to describe the biological, physical, and social effects of the action alternatives.
- Responds to those who would prefer that no management activities take place.
- Does not achieve the Purpose and Need of the Savanna Ecosystem Restoration Project.

### (2.3b) Alternative 2

Alternative 2 is the Proposed Action that was described during scoping with some minor modifications. Under Alternative 2, the management activities associated with Karner Blue butterfly habitat and forest and ecosystem health would be the same as those that were described during scoping. The modifications include: the non-motorized route within the White River Semiprimitive Nonmotorized Area (WRSNA) varies slightly and there is an increase in mileage from the initial proposal, and FR9310 and the southern portion of FR9309 in the Otto Metapopulation Area that were proposed to be closed would be left open year round. See Table 2.1 and the maps at the end of this chapter.

### Summary of Alternative 2

*(Measures are approximate)*

- 2,542 acres of savanna creation (existing forest types include: 1,490 acres of black oak, 319 acres of aspen/oak mix, 361 acres of red pine/oak mix, 117 acres of existing openings, 106 acres of aspen, 71 acres of red pine, 26 acres of white oak, 24 acres of mixed oak, 19 acres of Scots pine, and 9 acres of jack pine);
- 1,050 acres of prescribed burning (in addition to the burning efforts related to savanna restoration/creation);
- 761 acres of red pine thinning;
- 519 acres of Karner blue butterfly opening restoration;
- 23 acres of oak/aspen clearcut; and
- 42 acres of non-native invasive plant control by mechanical or manual removal and/or herbicide. Additionally, treatment of up to 10% of savanna creation and existing openings acreage may need treatment to reduce competition between native plants and non-native invasive species.
- Closure of the Forest System roads within the WRSNA (these would include: FR5315 (1.2 miles), FR5306 (3.0 miles), FR9045 (0.8 miles), FR5295 (4.1 miles), FR9353 (0.4 miles), and FR7992 (0.5 miles).
- The addition of a portion of FR9320 (0.8 miles) to the Motor Vehicle Use Map.
- Designation/construction of 19.7 miles of nonmotorized trail within the WRSNA that allows for horse use. Allow for the watering of horses using buckets at identified permanent water sources on National Forest System lands. Require the removal of horse manure and unused feed and hay from designated parking and camping areas within the WRSNA.
- Development of a day-use parking area off of Arthur Road, that would accommodate horse rigs and a parking area for motorized vehicles at the east end of Winston Road (within the WRSNA).
- Provide motorized camping at 11 designated sites.

Alternative 2 would also include a Forest Supervisor's closure order for the WRSNA that would require that horses remain on the designated trail, limit motorized camping to designated sites, and restrict day-use parking for horse use to the designated parking area on Arthur Road.

### (2.3c) Alternative 3

Alternative 3 was developed from comments received during the scoping period and responds to the issues of horse use in the WRSNA and management of the transportation system. Under Alternative 3, the management activities associated with Karner Blue butterfly habitat and forest and ecosystem health would be the same as those that are described in Alternative 2. Under this alternative, there would be no designated nonmotorized trail in the WRSNA. A Forest Supervisor's closure order would prohibit horses in the WRSNA and limit motorized camping to designated sites. A designated parking area for motorized vehicles would be developed at the eastern end of Winston Road, within the WRSNA. The Forest System roads within the WRSNA would be closed to motorized vehicles. In the Otto Metapopulation Area, the eastern end of FR9310 would be seasonally closed to motorized vehicles but left open to snowmobiles. Motor vehicle use from this road would be re-routed onto an improved FR9870.

The other road proposed for closure in the initial Public Scoping Letter, southern portion of FR9309, would remain open.

### Summary of Alternative 3

*(Measures are approximate)*

- 2,542 acres of savanna creation (existing forest types include: 1,490 acres of black oak, 319 acres of aspen/oak mix, 361 acres of red pine/oak mix, 117 acres of opening, 106 acres of aspen, 71 acres of red pine, 26 acres of white oak, 24 acres of mixed oak, 19 acres of Scots pine, and 9 acres of jack pine);
- 1,050 acres of prescribed burning (in addition to the burning efforts related to savanna restoration/creation);
- 761 acres of red pine thinning;
- 519 acres of Karner blue butterfly opening restoration;
- 23 acres of oak/aspen clearcut; and
- 42 acres of non-native invasive plant control by mechanical or manual removal and/or herbicide. Additionally, treatment of up to 10% of savanna creation and existing openings acreage may need treatment to reduce competition between native plants and non-native invasive species.
- Closure of the Forest System roads within the WRSNA (these would include: FR5315 (1.2 miles), FR5306 (3.0 miles), FR9045 (0.8 miles), FR5295 (4.1 miles), FR9353 (0.4 miles), and FR7992 (0.5 miles));
- The addition of a portion of FR9320 (0.8 miles) to the Motor Vehicle Use Map;
- Closure of FR9310 (0.7 miles) to motor vehicles (open to snowmobiles) within the Otto Metapopulation Area;
- No designated nonmotorized trail within the WRSNA;
- No horses allowed within the WRSNA;
- Provide motorized camping at 11 designated sites; and
- Development of a parking area for motorized vehicles at the east end of Winston Road (within the WRSNA).

## (2.4) Visual Representation

This section illustrates the goals of treatments, over time, in the SER Project Area.

### (2.4a) Savanna Creation from Existing Oak Stand



Encroaching vegetation → Overstory Removal & Burning → Open Canopy with Nectar Plants

### (2.4b) Red Pine Thinning



Unthinned Plantation → Thinned Plantation

## **(2.5) Conservation Measures**

Conservation measures are designed to prevent negative environmental impacts or to make the impacts that do occur less severe. These may include: avoiding an impact by not taking a certain action or part of an action; minimizing an impact by limiting the degree or magnitude of an action and its implementation; rectifying the impact by repairing, rehabilitating, or restoring the affected environment; reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action; or compensating for the impact by replacing or providing substitute resources or environments. Some conservation measures are common to all action alternatives, while others may apply only to specific treatment unit(s). The conservation measures that have been developed for this project can be found in Appendix A.

## **(2.6) Monitoring**

Monitoring is a means of measuring the effects of actions on the Forest. Monitoring would be conducted to determine if resource management objectives of the Savanna Ecosystem Restoration Project have been met. Monitoring results would be used to verify the implementation and effectiveness of selected mitigation and protective measures in a timely manner. Monitoring inspectors have the authority to initiate remedial action to repair resource damage and suspend operations until problems have been corrected. They also have the delegated authority to make minor changes in design to remedy adverse situations not identified in the initial project design. This process ensures that project elements are implemented as designed to protect soil, water, and other resources. The following monitoring would be performed for all action alternatives:

### **(2.6a) Implementation Monitoring**

#### **Contract Administration**

**Objective:** Ensure that the conservation measures are implemented.

**Desired Results:** All contract requirements are met.

**Methods:** District personnel will visit all Treatment Units and roads. Reviews will be documented in inspection reports regarding contract compliance.

**Responsibility:** District Assistant Ranger for Implementation

### **(2.6b) Effectiveness Monitoring**

#### **Reforestation**

**Objective:** Ensure that reforestation occurs (in the areas that are to be retained as part of the commercial timber base) within five years of treatment.

**Desired Result:** Adequately reforested stands and desired wildlife habitats.

**Methods:** Stocking surveys within the first five years after the treatment of a unit.

**Responsibility:** Shared-Services Silviculturist

#### **Non-Native Invasive Plant Control**

**Objective:** Ensure that the spread of invasive plants and noxious weeds is minimized.

**Desired Result:** No spread of invasive plants and noxious weeds due to treatments.

**Methods:** Ocular inspection within the first two years after the treatment of a unit.

**Responsibility:** Shared-Services Botanist

#### Road Closures

**Objective:** Ensure that the road closures are maintained throughout the Project Area.

**Desired Result:** Roads closed are not re-opened by the public.

**Methods:** Ocular inspection within the first five years after the road closures occur.

**Responsibility:** District Assistant Ranger for Implementation

#### Heritage Resources

**Objective:** Ensure that there are no negative impacts to heritage resources as a result of treatments.

**Desired Result:** No damage to recorded archaeological sites within the Project Area.

**Methods:** Ocular inspection within the first five years after the treatments of the units.

**Responsibility:** Shared-Services Archaeologist

#### Erosion

**Objective:** Ensure that erosion does not occur as a result of mechanical harvesting equipment on slopes.

**Desired Result:** No erosion would occur.

**Methods:** Ocular inspection during operations and continuing periodically for five years after a unit is treated.

**Responsibility:** District Assistant Ranger for Implementation

#### Threatened and Endangered Species

**Objective:** Ensure savanna conditions are maintained, desired herbaceous vegetation becomes established and persists, and the monitoring of Karner blue butterflies occurs within the Project Area.

**Desired Result:** Competition and shading would not prevent the establishment and persistence of the desired herbaceous vegetation. Karner blue butterfly subpopulations within the Project Area would not become extirpated.

**Methods:** Annual pre- and post-treatment monitoring of selected sites (including both treated and reference sites) will be conducted to measure the change in Karner blue butterfly numbers and selected quantitative and qualitative habitat variables to determine treatment effectiveness.

**Responsibility:** District Wildlife Biologist

#### Savanna Vegetative Composition

**Objective:** Ensure that savanna conditions are restored to an acceptable level of natural vegetative composition and that a suite of savanna herbaceous species are present in reasonable numbers for each area treated for savanna creation or restoration within the savanna complex.

**Desired Result:** Treatment would result in an increase in the abundance and species richness of desired savanna plant species. Treatment would not result in an increase of aggressive, non-desired plants which reduce species richness in a stand.

**Methods:** Pre- and post treatment monitoring of stands would occur to measure the changes in herbaceous plant composition to determine the effectiveness of treatments.

**Responsibility:** District Botanist

### Closure Compliance

**Objective:** Ensure that the guidelines of the closure order for the selected alternative are adhered to throughout the Project Area.

**Desired Result:** Forest Roads within the WRSNA are maintained as closed. KBB habitat is not compromised by the recreation activities occurring within the Project Area.

**Methods:** Annual inspections of roads, trails (including the associated features), and KBB habitat by the applicable resource specialists.

**Responsibility:** District Assistant Ranger for Implementation

## (2.6) Alternatives Considered but Eliminated from Detailed Study

Federal agencies are required by the National Environmental Policy Act to explore and evaluate all reasonable alternatives and to briefly discuss the reasons for eliminating any alternatives that were not developed in detail (40 CFR 1502.14). Public comments received in response to the Proposed Action outlined in the Scoping Letter provided suggestions for achieving the Purpose and Need. Some of the suggestions were outside the scope of this project, duplicative of the alternatives considered in detail, would need to be addressed at a higher level within the organization, are beyond the authority of the Forest Service, or are determined to be components that would cause unnecessary environmental harm. The following alternative considerations were eliminated and are described below:

### (2.6a) The Development of a White River Management Plan

For this project, there were many comments that were specific to the recreational management of, or the lands adjacent to, the White River. As many of these comments were very detailed and substantive in regards to this management, the ID team considered the development and analysis of an alternative dealing specifically with the recreational use of, and adjacent to, the portions of the river within the Project Area boundary. Scoping for this project identified the need for a comprehensive management plan for the White River. The White River was identified as a study river to determine possible future inclusion in the National Wild and Scenic River System in the Michigan Scenic Rivers Act of 1992. This Act requires that the river study, to evaluate the White's eligibility, be completed by a committee appointed by the Secretary of Agriculture. Until a river study is completed, the Forest Plan identifies a corridor and contains standards and guidelines to protect the unique characteristics of the White. Additional protection to private lands within the corridor is afforded under the State Natural River designation. Therefore, analyzing an alternative that develops a management plan for the portion of the White within the Project Area is beyond the stated Purpose and Need for this project.

### (2.6b) The Development of a Semiprimitive Scenic Driving Route

Comments were received from the public during the scoping process that proposed the development of a "Scenic Driving Route" within the Semiprimitive Nonmotorized Management Area. The intent of the proposed route was to continue to provide Forest users with motorized access within this area by utilizing portions of the existing road system that would link users to the historic and current high-use areas for recreation. Elements of this proposal included: 1) the

abandonment of the roads within the Semiprimitive Nonmotorized Area that are currently under the jurisdiction of the Oceana County Road Commission, 2) the re-opening of Forest roads that were previously closed and/or not on the Motor Vehicle Use Map, and 3), the development and designation of campsites accessible by motor vehicles at multiple locations along the White River. As it pertains to motorized access within the Semiprimitive Nonmotorized Area, the Purpose and Need is to protect KBB habitat while providing a non-motorized recreational experience. The development of a "Scenic Driving Route" would not meet this Purpose and Need. In addition, the Forest Service cannot make management decisions on properties or features that are owned by, or under the jurisdiction of, other private landowners or public agencies. The implementation of the "Scenic Driving Route" would be reliant on the abandonment of the roads within the Semiprimitive Nonmotorized Area that are under the jurisdiction of the Oceana County Road Commission.

(2.6c) Changing the Designation of the White River Semiprimitive Nonmotorized Area

Comments were also received during the scoping period encouraging the Forest Service to consider changing the designation of the White River Semiprimitive Nonmotorized Area to that of Roaded Natural. The designation of this area was initially made in the Forest Plan of 1986. This area and designation was reviewed again during the analysis for the most recent Forest Plan (2006) and was found to contain the necessary attributes to carry the Semiprimitive Nonmotorized designation forward. To change a Management Area designation is beyond the Purpose and Need for this project and could only be accomplished through an amendment to the existing Forest Plan.

Table 2.1: Summary Comparison of Alternatives

RELEVANT ISSUES	MEASUREMENT	ALT. 1	ALT. 2	ALT. 3
Horse Use within the White River SPNM Area	Miles of Nonmotorized Trail	0	19.7	0
	Number of Designated Campsites	0	11	11
	Forest Closure Order	0	Yes	Yes
	Miles of Open Road			
	Management Area 6.1	22.0	12.0	12.0
	Management Area 4.4	24.0	24.3	23.6
	Miles of Road Closure			
	Management Area 6.1	0	10	10
	Management Area 4.4	0	0.5	1.2
	Road Density (mi/mi <sup>2</sup> )			
Manage the Transportation System -Provide Motorized Access -Limit Resource Damage	Management Area 6.1	1.8	1.0	1.0
	Management Area 4.4	2.1	2.1	2.0
PROJECT OBJECTIVES AND PROPOSED ACTIONS				
Provide Karner Blue Butterfly Habitat	MEASUREMENT			
Savanna Creation <sup>1</sup>	Acres	0	2,542	2,542
Opening Restoration	Acres	0	519	519
Non-Native Invasive Plants <sup>2</sup>	Acres	0	42	42
Actions Associated with the Protection of Karner Blue Butterfly Habitat				
Recreation	MEASUREMENT			
Management Area 6.1 (Semiprimitive Nonmotorized)				
Designated Camping	Campsites	0	11	11
Nonmotorized Trail	Miles	0	19.7	0
Designated Parking	Lots	0	2	1
Open Roads	Miles	22.0	12.0	12.0
Management Area 4.4 (Rural)				
Open Roads	Miles	24.0	24.3	23.6
Roads closed in suitable or occupied KBB habitat	Miles	0	0	0.7

<sup>1</sup> A combination of mechanical equipment, hand tools, prescribed burning, seeding/planting, and/or herbicide application would be used to create an interconnecting network of closed, partially closed, and open canopy areas that contain native grasses and KBB nectar plant species within the White River and Otto Metapopulation Areas. Not all National Forest System lands would receive the same treatments. For example, relatively open forests with remnant native grass and/or nectar plant populations would require fewer treatments to achieve the desired future condition, compared to dense forests.

<sup>2</sup> Treatment of up to 10% of savanna creation and existing opening acres may need herbicide treatment to reduce competition between native plants and non-native invasive species during project implementation. Project implementation will occur over the next 10 years. This acreage would be in addition to the 39 acres shown above.

Table 2.1 (continued): Summary Comparison of Alternatives

Sustain Forest and Ecosystem Health and Minimize Wildfire Potential				
MEASUREMENT				
Red Pine Thinning	Acres	0	761	761
Aspen/Oak Clearcut	Acres	0	23	23
Prescribed Burning (in addition to savanna creation acres)	Acres	0	1,050	1,050

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